Sydney Metro City & Southwest:
Crows Nest
Over Station Development

Preliminary Construction Management Statement

Applicable to:	Sydney Metro City & Southwest
Author:	Sydney Metro Authority
Owner	Sydney Metro Authority
Status:	Final
Version:	06
Date of issue:	November 2018

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Executive Summary

Statement Purpose

This document has been prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) for a concept State Significant Development Application (concept SSD Application) proposing over station development (OSD) above Crows Nest Metro Station. The SEARs issued on the 26th September 2018 for the concept proposal call for the preparation of a preliminary construction management statement (the Statement) addressing how future construction stages will manage impacts to pedestrians, rail users, bus services and taxis.

OSD Overview

The concept SSD Application seeks approval for mixed use residential, hotel and/or commercial building envelopes above the Crows Nest Metro precinct. Residential uses are proposed above podium level in building forms including two 27 storey buildings. Other proposed building forms include a hotel or commercial building of 17 storeys and an eight storey commercial building. A maximum total of 55,400 square metres of gross floor area (GFA) is proposed for all OSD buildings. The proposed on-site supply of 150 car parking spaces is in line with a similar nearby developments and North Sydney Development Control Plan 2013, excluding service vehicle spaces and associated loading dock facilities which are accessed via Clarke Lane. Pedestrian access to the metro station would be from Pacific Highway and Hume Street and the OSD lobbies would be accessed from Hume Street, Oxley Street and Pacific Highway.

OSD Construction Traffic Management Principles

Construction would occur generally in accordance with the following:

- Metro contract requirements and relevant standards
- Construction Traffic Haulage Routes (as provided for in the EIS and CSSI approval)
- Construction Traffic Management Framework (CTMF): This document provides the overall strategy and approach for construction traffic management for the Metro project, and an outline of the traffic management requirements and processes that will also apply to OSD construction at the Crows Nest and other OSD sites
- Relevant traffic management methodologies and procedures approved previously for the site. (Note that these did not take account of the possibility of concurrent Metro station and OSD construction as outlined below)

OSD Construction Scenarios

The buildings that comprise the Crows Nest OSD are on different sites and could potentially be developed at different times. Construction management planning is therefore proceeding on the basis of three possible staging scenarios:

- Scenario 1: all OSD is constructed while Metro station construction is underway and all buildings are effectively complete when the station is opened.
- Scenario 2: OSD construction has commenced for all buildings and may still be occurring

after commencement of Metro station operation.

- Scenario 3: OSD construction starts after the Metro station is operational and could be staged.

The anticipated construction timeline for each staging scenario is as follows:

- Scenario 1: Station work complete and station operational in 2024. OSD start: 2022. OSD completed by 2024.
- Scenario 2: Station work complete and station operational in 2024. OSD start: after 2023 with completion post 2024.
- Scenario 3: Station work completed and station operational in 2024. OSD start: after 2024.

The developer awarded the OSD development rights will determine the timeframe of the OSD construction and communicate these in a Construction Traffic Management Plan (CTMP). Further details confirming the construction methodology and associated impact assessment and mitigation measures will be provided with the future detailed SSD Application.

OSD Construction Impacts & Mitigation

A number of measures have been identified to minimise and mitigate construction impacts having regard to the construction staging scenarios identified above. Mitigation strategies have also been developed to ensure that impacts on pedestrians, rail users, bus services and taxis are manageable for all staging scenarios. A detailed construction management statement will be submitted by contractors building the OSD to accompany the future detailed SSD Application.

1.0 Introduction

1.1 Purpose of this report

This report supports a concept State Significant Development application (concept SSD Application) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The concept SSD Application is made under Section 4.22 of the EP&A Act.

Sydney Metro is seeking to secure concept approval for a mixed use development comprising four buildings above the Crows Nest Station, otherwise known as the over station development (OSD). The concept SSD Application seeks consent for building envelopes and land uses, maximum building heights, maximum gross floor areas, pedestrian and vehicular access, circulation arrangements and associated car parking and the strategies and design parameters for the future detailed design of the development.

Sydney Metro proposes to procure the construction of the OSD as part of an Integrated Station Development package, which would result in the combined delivery of the station, OSD and public domain improvements. The station and public domain elements form part of a separate planning approval for Critical State Significant Infrastructure (CSSI) approved by DPE on 9 January 2017.

As the development is within a rail corridor, is associated with railway infrastructure and is for commercial premises and residential accommodation with a Capital Investment Value of more than $30 million, the project is identified as State Significant Development (SSD) pursuant to Schedule 1, 19(2)(a) of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP). The development is therefore, State significant development for the purposes of Section 4.36 of the EP&A Act.

This report has been prepared to specifically respond to the Secretary's Environmental Assessment Requirements (SEARs) issued for the concept SSD Application on 26 September 2018 which states that the Environmental Impact Statement (EIS) is to address the following requirements:

Reference	SEARs Requirement	Where Addressed in Report
Section 12- Traffic, Transport Access	The EIS must describe the preliminary construction traffic arrangements and management measures, including consideration of the cumulative construction traffic impacts from infrastructure works in the surrounding road/traffic network.	Chapters 2- 6 of this report
Plans and Documents	The EIS must include the following: • Preliminary construction management statement	This Report

Based on the above requirements, this report provides a summary of the compliance strategy for the proposal highlighting the key principles of accessibility as well as the technical requirements for the future development to ensure the public, staff, residents and visitors have equitable and dignified use.

1.2 Overview of Sydney Metro in its context

Sydney Metro is Australia's biggest public transport project. A new standalone metro railway system, this 21st century network will deliver 31 metro stations and 66km of new metro rail for Australia's biggest city — revolutionising the way Sydney travels. Services start in the first half of 2019 on Australia's first fully-automated railway.

Sydney Metro was identified in *Sydney's Rail Future*, as an integral component of the *NSW Long Term Transport Master Plan*, a plan to transform and modernise Sydney's rail network so it can grow with the city's population and meet the future needs of customers. In early 2018, *the Future Transport Strategy 2056* was released as an update to *the NSW Long Term Transport Master Plan* and *Sydney's Rail Future*. Sydney Metro City & Southwest is identified as a committed initiative in the *Future Transport Strategy 2056*.

Sydney Metro is comprised of three projects, as illustrated in **Figure 1**:

- **Sydney Metro Northwest** — formerly the 36km North West Rail Link. This $8.3 billion project is now under construction and will open in the first half of 2019 with a metro train every four minutes in the peak.

- **Sydney Metro City & Southwest** — a new 30km metro line extending the new metro network from the end of Sydney Metro Northwest at Chatswood, under Sydney Harbour, through the CBD and south west to Bankstown. It is due to open in 2024 with an ultimate capacity to run a metro train every two minutes each way through the centre of Sydney.

- **Sydney Metro West** – a new underground railway connecting the Parramatta and Sydney central business districts. This once-in-a-century infrastructure investment will double the rail capacity of the Parramatta to Sydney CBD corridor and will establish future capacity for Sydney's fast growing west. Sydney Metro West will serve five key precincts at Westmead, Parramatta, Sydney Olympic Park, The Bays and the Sydney CBD. The project will also provide an interchange with the T1 Northern Line to allow faster connections for customers from the Central Coast and Sydney's north to Parramatta and the Sydney CBD.

Sydney's new metro, together with signalling and infrastructure upgrades across the existing Sydney suburban rail network, will increase the capacity of train services entering the Sydney CBD – from about 120 an hour currently to up to 200 services beyond 2024. That's an increase of up to 60 per cent capacity across the network to meet demand.

Sydney Metro City & Southwest includes the construction and operation of a new metro rail line from Chatswood, under Sydney Harbour through Sydney's CBD to Sydenham and on to Bankstown through the conversion of the existing line to metro standards.

The project also involves the delivery of six (6) new metro stations, including at Crows Nest, together with new underground platforms at Central. Once completed, Sydney Metro will have the ultimate capacity for a train every two minutes through the CBD in each direction - a level of service never seen before in Sydney.

Figure 1: Sydney Metro alignment map

On 9 January 2017, the Minister for Planning (the Minister) approved the Sydney Metro City & Southwest - Chatswood to Sydenham application lodged by TfNSW as a Critical State Significant Infrastructure project (reference SSI 15_7400), hereafter referred to as the CSSI Approval.

The CSSI Approval includes all physical work required to construct the CSSI, including the demolition of existing buildings and structures on each site. Importantly, the CSSI Approval also includes provision for the construction of below and above ground structures and other components of the future OSD (including building infrastructure and space for future lift cores, plant rooms, access, parking and building services, as relevant to each site). The rationale for this delivery approach, as identified within the CSSI application is to enable the OSD to be more efficiently built and appropriately integrated into the metro station structure.

The EIS for the Chatswood to Sydenham alignment of the City & Southwest project identified that the OSD would be subject to a separate assessment process.

Since the CSSI Approval was issued, Sydney Metro has lodged five modification applications to amend the CSSI Approval as outlined below:

- **Modification 1** - Victoria Cross and Artarmon Substation which involves the relocation of the Victoria Cross northern services building from 194-196A Miller Street to 50 McLaren Street together with the inclusion of a new station entrance at this location referred to as Victoria Cross North. The modification also involves the relocation of the substation at Artarmon from Butchers Lane to 98 – 104 Reserve Road. This modification application was approved on 18 October 2017.

- **Modification 2 -** Central Walk which involves additional works at Central Railway Station including construction of a new eastern concourse, a new eastern entry, and upgrades to suburban platforms. This modification application was approved on 21 December 2017.

- **Modification 3** - Martin Place Station which involves changes to the Sydney Metro Martin Place Station to align with the Unsolicited Proposal by Macquarie Group Limited (Macquarie) for the development of the station precinct. The proposed modification involves a larger reconfigured station layout, provision of a new unpaid concourse link and retention of the existing MLC pedestrian link and works to connect into the Sydney Metro Martin Place Station. It is noted that if the Macquarie proposal does not proceed, the original station design remains approved. This modification application was approved on 22 March 2018.

- **Modification 4** - Sydenham Station and Sydney Metro Trains Facility South which incorporated Sydenham Station and precinct works, the Sydney Metro Trains Facility South, works to Sydney Water's Sydenham Pit and Drainage Pumping Station and ancillary infrastructure and track and signalling works into the approved project. This modification application was approved on 13 December 2017.

- **Modification 5** - Blues Point acoustic shed modification which involves the installation of a temporary acoustic shed at Blues Point construction site and retrieval of all parts of the tunnel boring machines driven from the Chatswood dive site and Barangaroo through the shaft at the Blues Point temporary site. This modification application was approved on 2 November 2018.

The CSSI Approval as modified allows for all works to deliver Sydney Metro between Chatswood and Sydenham Stations and also includes upgrade of Sydenham Station.

The remainder of the City & Southwest alignment (Sydenham to Bankstown) proposes the conversion of the existing heavy rail line from west of Sydenham Station to Bankstown to metro standards. This part of the project, referred to as the Sydenham to Bankstown upgrade, is the subject of a separate CSSI Application (Application No. SSI 17_8256) for which an EIS was exhibited between September and November 2017, and a Submissions

and Preferred Infrastructure Report was exhibited in June and July 2018. This application is currently being assessed by DPE.

1.3 Planning relationship between Crows Nest Station and the OSD

While Crows Nest Station and the OSD will form an Integrated Station Development, the planning pathways defined under the *Environmental Planning & Assessment Act 1979* require separate approval for each component of the development. In this regard, the approved station works (CSSI Approval) are subject to the provisions of Part 5.1 of the EP&A Act (now referred to as Division 5.2) and the OSD component is subject to the provisions of Part 4 of the EP&A Act.

For clarity, the approved station works under the CSSI Approval included the construction of below and above ground structures necessary for delivering the station and also enabling construction of the integrated OSD. This includes but is not limited to:

- demolition of existing development
- excavation
- integrated station and OSD structure (including concourse and platforms)
- lobbies
- retail spaces within the station building
- public domain improvements
- pedestrian through-site link
- access arrangements including vertical transport such as escalators and lifts
- space provisioning and service elements necessary to enable the future development of the OSD, such as lift cores, plant rooms, access, parking, retail, utilities connections and building services.

The vertical extent of the approved station works above ground level is defined by the 'transfer level' level, above which would sit the OSD. This delineation is illustrated in **Figure 2**.

The CSSI Approval also establishes the general concept for the ground plane of Crows Nest Station including access strategies for commuters, pedestrians, workers, visitors and residents.

Since the issue of the CSSI Approval, Sydney Metro has undertaken sufficient design work to determine the space planning and general layout for the station and identification of those spaces within the station area that would be available for the OSD. In addition, design work has been undertaken to determine the technical requirements for the structural integration of the OSD with the station. This level of design work has informed the concept proposal for the Crows Nest OSD. It is noted that ongoing design development of the works to be delivered under the CSSI Approval would continue with a view to developing an Interchange Access Plan (IAP) and Station Design Precinct Plan (SDPP) for Crows Nest Station to satisfy Conditions E92 and E101 of the CSSI Approval.

All public domain improvement works around the site would be delivered as part of the CSSI Approval.

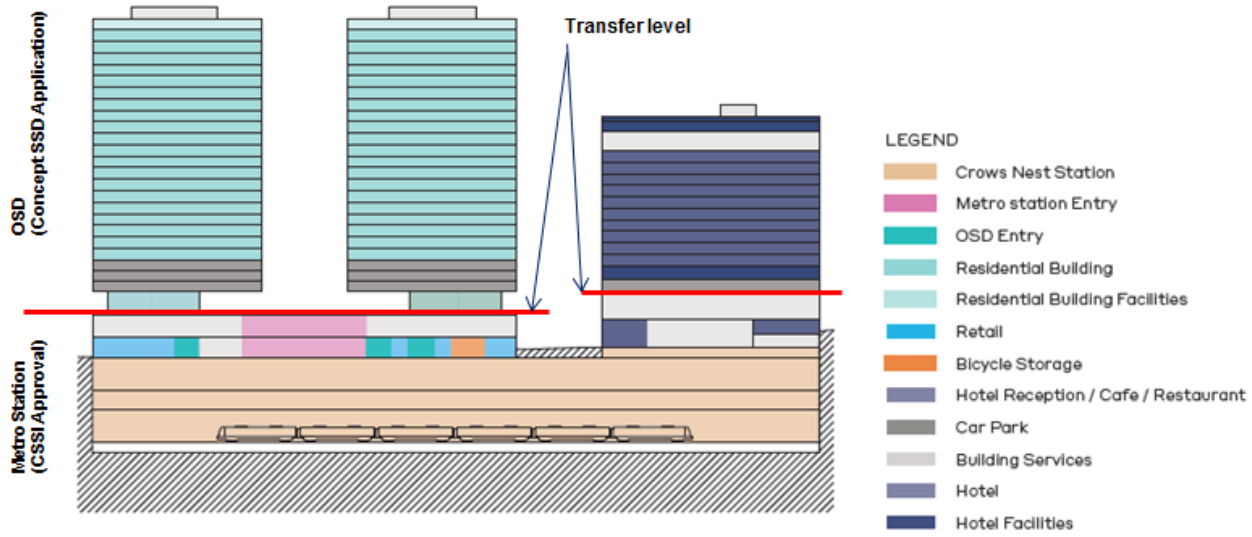

Figure 2: Delineation between the Metro station and OSD (based on indicative OSD design)

1.4 The strategic planning context

DPE is currently undertaking strategic planning investigations into revitalising the area surrounding St Leonards railway station and the metro station at Crows Nest. In August 2017, DPE released the *St Leonards and Crows Nest Station Precinct Interim Statement* and in October 2018 DPE released the *St Leonards and Crows Nest 2036 Draft Plan* (2036 Draft Plan) and supporting documents which detail recommended changes to land use controls in the precinct. These documents recommend new developments be centred around the Pacific Highway corridor and the Crows Nest Station while protecting the amenity of Willoughby Road.

In October 2018, DPE also placed on public exhibition the *Crows Nest Sydney Metro Site Rezoning Proposal* (Planning Proposal). The Planning Proposal outlines the State led rezoning of the subject site, on the basis that the current planning controls in the *North Sydney Local Environmental Plan 2013* do not reflect the opportunities for improved accessibility associated with the new metro station enabling people to live, work and spend time close to public transport. This concept SSD Application is aligned with the planning controls proposed in the Planning Proposal.

1.5 The site

Crows Nest Station precinct is located between the Pacific Highway and Clarke Street (eastern side of the Pacific Highway) and Oxley Street and south of Hume Street, Crows Nest (**Figure 3**).

The site is located within the North Sydney Local Government Area.

The Crows Nest Station precinct is divided into three separate sites as illustrated in **Figure 4** and described below:

- **Site A:** Six lots in the block bound by the Pacific Highway, Hume Street, Oxley Street and Clarke Lane (497-521 Pacific Highway, Crows Nest)
- **Site B:** Three lots on the southern corner of Hume Street and Pacific Highway (477-495 Pacific Highway, Crows Nest)
- **Site C:** One lot on the north-western corner of Hume Street and Clarke Street (14 Clarke Street, Crows Nest).

Sites A, B and C have a combined site area of 6,356 square metres.

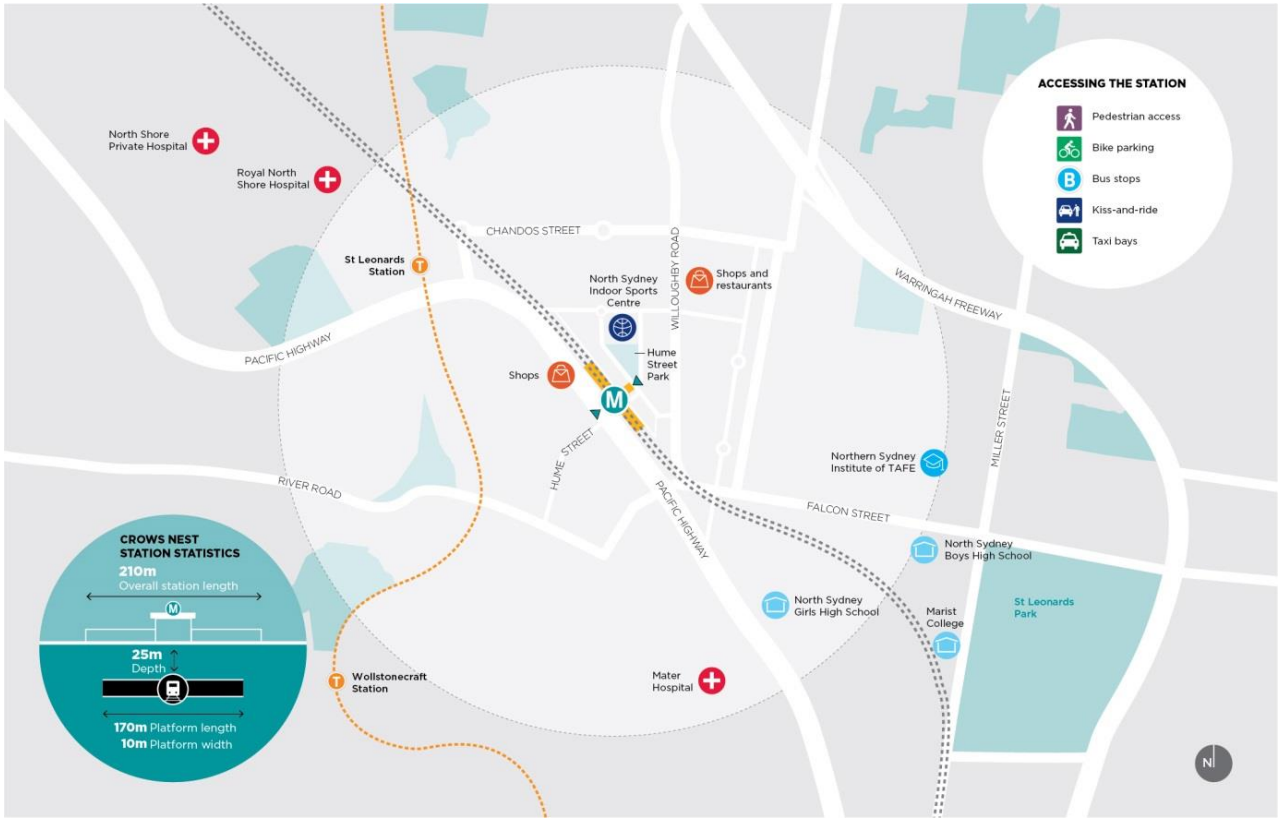

Figure 3: Crows Nest Station location plan

Figure 4: The subject site

The site comprises the following properties:

- **Site A:**
  - 497 Pacific Highway (Lot 2 in DP 575046)
  - 501 Pacific Highway (Lot 1 in DP 575046)
  - 503-505 Pacific Highway (Lot 3 in DP 655677)
  - 507-509 Pacific Highway (Lot 4 in DP 1096359)
  - 511-519 Pacific Highway (SP 71539)
  - 521-543 Pacific Highway (Lot A and Lot B in DP 374468)
- **Site B:**
  - 477 Pacific Highway (Lot 100 in DP 747672)
  - 479 Pacific Highway (Lot 101 in DP 747672)
  - 491-495 Pacific Highway (Lot 100 in DP 442804)
- **Site C:**
  - 14 Clarke Street (Lot 1 in SP 52547)

1.6 Overview of the proposed development

This concept SSD Application comprises the first stage in the Crows Nest OSD project. It will be followed by a detailed SSD Application for the design and construction of the OSD to be lodged by the successful contractor who is awarded the contract to deliver the Integrated Station Development.

This concept SSD Application seeks approval for the planning and development framework and strategies to inform the future detailed design of the Crows Nest OSD.

The concept SSD Application specifically seeks approval for the following:

- maximum building envelopes for Sites A, B and C, including street wall heights and setbacks as illustrated in the plans prepared by Foster + Partners for Sydney Metro

- maximum building heights:
    - **Site A:** RL 183 metres or equivalent of 27 storeys (includes two station levels and conceptual OSD space in the podium approved under the CSSI Approval)
    - **Site B:** RL 155 metres or equivalent of 17 storeys (includes two station levels and conceptual OSD space approved under the CSSI Approval)
    - **Site C:** RL 127 metres or 8 storeys (includes two station levels and conceptual OSD space approved under the CSSI Approval)

      Note 1: the maximum building heights defined above are measured to the top of the roof slab and exclude building parapets which will be resolved as part of future detailed SSD Application(s)
    - maximum height for a building services zone on top of each building to accommodate lift overruns, rooftop plant and services:
        - **Site A:** RL 188 or 5 metres
        - **Site B:** RL 158 or 3 metres
        - **Site C**: RL 132 or 5 metres

      Note 1: the use of the space within the building services zone is restricted to non-habitable floor space.

      Note 2: for the purposes of the concept SSD Application, the maximum height of the building envelope does not make provision for the following items, which will be resolved as part of the future detailed SSD Application(s):
        - communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like, which are excluded from the calculation of building height pursuant to the standard definition in NSLEP 2013
        - architectural roof features, which are subject to compliance with the provisions in Clause 5.6 of NSLEP 2013, and may exceed the maximum building height, subject to development consent.
- maximum gross floor area (GFA) of 55,400sqm for the OSD comprising the following based on the proposed land uses:
    - **Site A:** Residential accommodation - maximum 37,500 square metres (approximately 350 apartments)
    - **Site B:** Hotel / tourist accommodation and associated conference facilities or commercial office premises GFA - maximum of 15,200 square metres (approximately 250 hotel rooms)
    - **Site C:** Commercial office premises GFA - maximum of 2,700 square metres
    - **Site A or C**: social infrastructure GFA inclusive of the GFA figures nominated above for each site, with provision optional as follows:
        - Site A: podium rooftop (approximately 2,700 square metres)
        - Site C: three floors and rooftop (approximately 1,400 square metres)

      Note 1: GFA figures exclude GFA attributed to the station and station retail space approved under the CSSI Approval

- a minimum non-residential floor space ratio (FSR) for the OSD across combined Sites A, B and C of 2.81:1 or the equivalent of 17,900 square metres
- the use of approximate conceptual areas associated with the OSD which have been provisioned for in the Crows Nest station box (CSSI Approval) including areas above ground level (i.e. OSD lobbies and associated spaces)
- a maximum of 150 car parking spaces on Sites A and B associated with the proposed commercial, hotel and residential uses
- loading, vehicular and pedestrian access arrangements
- strategies for utilities and services provision
- strategies for managing stormwater and drainage
- a strategy for the achievement of ecological sustainable development
- a public art strategy
- indicative signage zones
- a design excellence framework
- the future subdivision of parts of the OSD footprint, if required.

As this is a staged development pursuant to section 4.22 of the EP&A Act, future approval would be sought for the detailed design and construction of the OSD.

The proposed location of the buildings on the site is illustrated in the location plan provided at **Figure 5**.

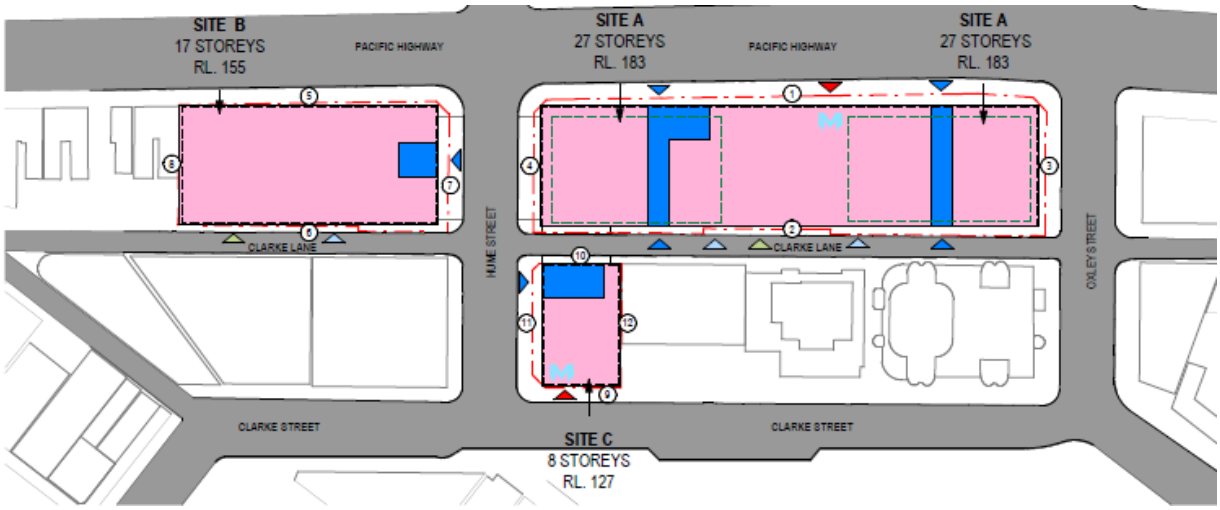

Figure 5 – Proposed location of buildings on the

The total GFA for the integrated station development, including the station GFA (i.e. retail, station circulation and associated facilities) and the OSD GFA is 60,400 square metres, equivalent to a floor space ratio (FSR) of 9.5:1.

The concept proposal includes opportunities for community uses in the development on either Site A or Site C. This space has the potential to be used for a range of uses including

community facilities, child care centre, recreational area/s, library, co-working space, which can take advantage of the sites accessibility above the metro station.

Through design development post the CSSI Approval, pedestrian access to the metro station is proposed from the Pacific Highway and from Clarke Street, opposite the Hume Street Park. Vehicular access to the site including separate access to the loading docks and parking is proposed from Clarke Lane.

Public domain works around the site would be delivered as part of the CSSI Approval. Notwithstanding, the OSD will be appropriately designed to complement the station and activate the public domain. Provision for retail tenancies to activate the public domain are included in the ground floor of Sites A, B and C, as part of the CSSI Approval. Future detailed development applications will seek approval for the fitout and specific use of this retail space.

Drawings illustrating the proposed building envelopes are provided in Figures 6A and 6B. The concept SSD Application includes an indicative design for the OSD to demonstrate one potential design solution within the proposed building envelope (refer to Figure 7).

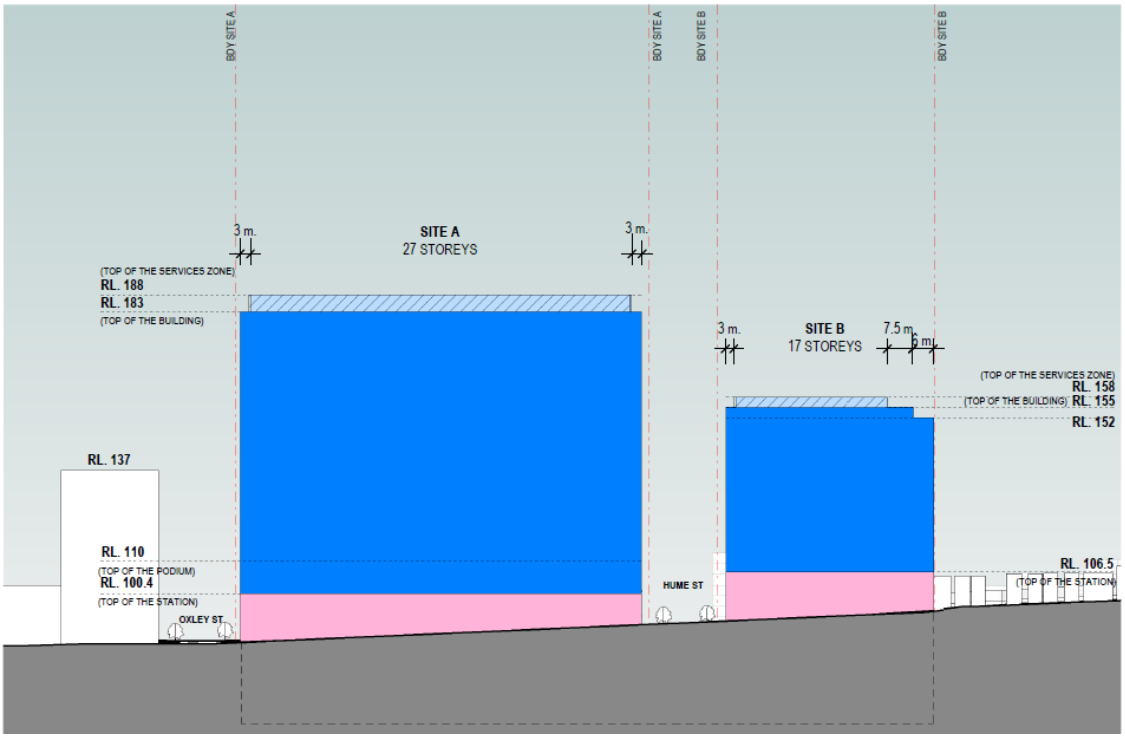

Figure 6A: Proposed Crows Nest OSD building envelopes – west elevation (Pacific Highway)

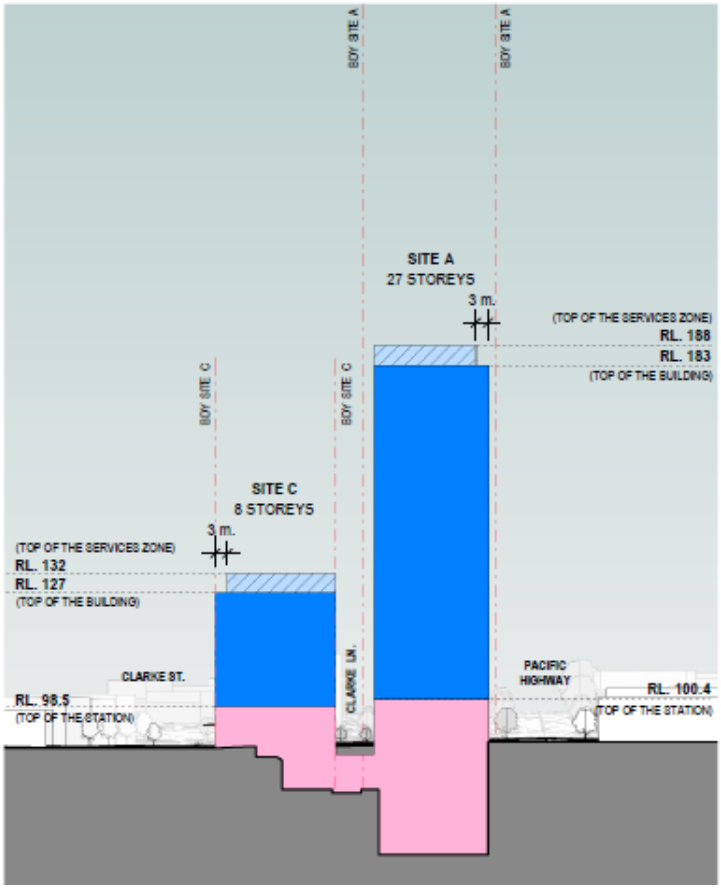

Figure 6B: Proposed Crows Nest OSD building envelopes – cross section through the site (east-west)

Figure 7: Crows Nest OSD indicative design

1.7 Staging and framework for managing environmental impacts

Sydney Metro proposes to procure the delivery of the Crows Nest Integrated Station Development in one single package, which would entail the following works:

- station structure fit-out, including mechanical and electrical
- OSD structure fit-out, including mechanical and electrical.

Separate delivery packages are also proposed by Sydney Metro to deliver the excavation of the station boxes/shafts ahead of the Integrated Station Development delivery package, and linewide systems (e.g. track, power, ventilation) and operational readiness works prior to the Sydney Metro City & Southwest metro system being able to operate.

Three possible construction staging scenarios have been identified for delivery of the Integrated Station Development:

1. Scenario 1 – the station and OSD are constructed concurrently by constructing the transfer slab first and then building in both directions. Both the station and OSD would be completed in 2024.
2. Scenario 2 – the station is constructed first and ready for operation in 2024. OSD construction may still be incomplete or soon ready to commence after station construction is completed. This means that some or all OSD construction is likely to still be underway upon opening of the station in 2024.
3. Scenario 3 – the station is constructed first and ready for operation in 2024. The OSD is built at a later stage/s, with timing yet to be determined. This creates two distinct construction periods for the station and OSD.

Scenario 1 represents Sydney Metro's preferred option as it would provide for completion of the full Integrated Station Development and therefore the optimum public benefit at the site at the earliest date possible (i.e. on or near 2024 when the station is operational). However, given the delivery of the OSD could be influenced by property market forces, Scenarios 2 or 3 could also occur, where there is a lag between completion of the station component of the ISD (station open and operational), and a subsequent development. Given that the buildings are on different sites, a blend of scenarios 2 and 3 is also possible, with some buildings commencing construction prior to station operations but other buildings commencing after the station is operating.

The final staging for the delivery of the OSD would be resolved as part of the future detailed SSD Application(s).

For the purposes of providing a high level assessment of the potential environmental impacts associated with construction, the following have been considered:

- Impacts directly associated with the OSD, the subject of this SSD Application
- Cumulative impacts of the construction of the OSD at the same time as the station works (subject of the CSSI Approval).

Given the integration of the delivery of the Sydney Metro City & Southwest metro station with an OSD development, Sydney Metro proposes the framework detailed in **Figure 5** to

manage the design and environmental impacts, in relation to noise and vibration, consistent with the framework adopted for the CSSI Approval.

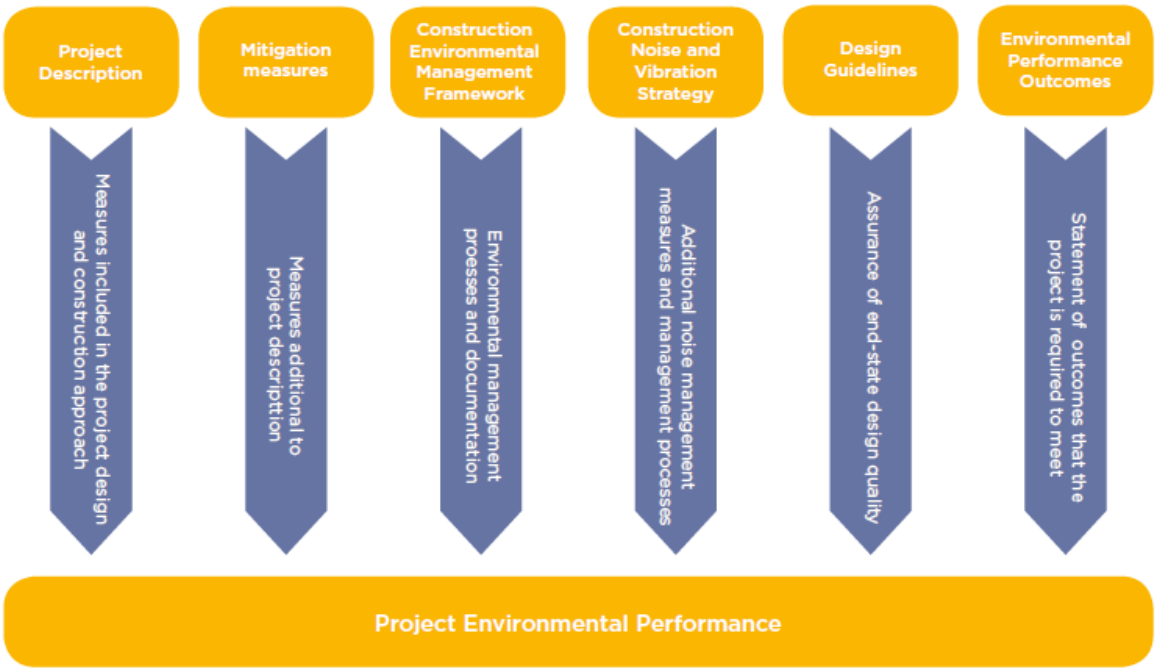

Figure 5: Project approach to environmental mitigation and management

This approach would be implemented until such time as practical completion of the station works (i.e. works under the CSSI Approval) is achieved. Beyond that point, standard construction environmental management practices would be implemented by the OSD developer in accordance with relevant guidelines and any conditions of approval.

2.0 Construction Traffic Management Principles

2.1 CSSI EIS & CSSI Approval Conditions

Condition A4 of Schedule 2 of the CSSI Approval states that except to the extent described in the EIS or PIR, any OSD, including associated future uses, does not form part of this CSSI and will be subject to the relevant assessment pathway prescribed by the EP&A Act. Notwithstanding, the construction haulage routes identified within the CSSI EIS (refer to **Figure 6**) are those that would generally apply to any OSD construction on the site whilst OSD works are undertaken concurrently with works approved by the CSSI, subject to CTMP preparation and road authority views.

Figure 6: CSSI construction haulage routes, Crows Nest

Haulage routes are via Pacific Highway to the north of the site, accessing the site via Hume Street and also Oxley and Clarke Streets, and egressing from Clarke Lane, Clarke Street and Hume Street to Pacific Highway.

2.2 Construction Traffic Management Framework

The OSD does not form part of the Sydney Metro CSSI Approval dated 9 January 2017. The Construction Traffic Management Framework (CTMF) prepared by the Sydney Metro Delivery Office in accordance with Condition E81 of the CSSI Approval provides the overall strategy and approach for construction traffic management for the Metro project, and an outline of the traffic management requirements and processes that will be common to each of the proposed work sites. It establishes the traffic management processes and acceptable criteria to be considered and followed in managing roads and footpaths adjacent to Project worksites. The principles and procedures outlined in the CTMF are proposed to apply to OSD construction where there is concurrent station and OSD construction, notwithstanding Clause A4, Schedule 2 of the CSSI Approval. However, the Sydney Co-Ordination Office (SCO) and the Roads and Maritime Services (RMS) may require that additional OSD specific requirements are placed on any approval.

The CSSI CTMF identifies a number of issues at the Crows Nest site(s) that CSSI CTMPs will need to address and mitigate for all staging scenarios. These include:

- pedestrian activity on the Pacific Highway
- pedestrian and cyclist safety
- impact on bus stops and bus operations
- impact of heavy vehicle movements on sensitive receivers (residents, schools)
- business and residential access
- cumulative construction traffic from other developments.

Additionally, Appendix C of the CTMF identifies a number of RMS and SCO site specific access and routing operational imperatives as follows:

- CTMP to clearly demonstrate turning paths for truck and dogs and heavy rigid vehicles in and out of Clarke Lane.
- SCO does not support the use of on-street parking zones by trucks, without prior approval.

The CTMP will also need to address the contractors approach to the management of active transport activities and the general public.

2.3 Other Recently Approved CTMPs for the Site

Multiple (Metro Demolition and TSE contract) CTMPs have been approved by RMS for the Crows Nest site since May 2017. These include:

- Sydney Metro City & South West CTMP Crows Nest Sites April 2017 Rev C-00 (Demolition).
- Sydney Metro City & South West CTMP – Crows Nest utility Works - TSE Works Rev C SMCSWTSE-JCG-SCN-CN-PLN-002301 for utility relocation.
- Sydney Metro City & South West CTMP – Crows Nest Utility Works – Addendum 1 -

TSE Works Rev H SMCSWTSE-JCG-SCN-CN-PLN-002301

- Sydney Metro City & South West CTMP – Crown Nest Site Establishment - TSE Works Rev D SMCSWTSE-JCG-SCN-CN-PLN-002270 for site establishment
- Sydney Metro City & South West CTMP – Crows Nest Stage 1 site operations - TSE Works Rev D SMCSWTSE-JCG-SCN-TM-PLN-002271 - closure of Hume Street.

The OSD contractor is likely to require vehicular access to and from the kerbside lanes in Clarke Lane, Clarke Street, Hume Street and Oxley Street, designated as work zones at different times throughout construction. Short term work zones on the Pacific Highway may be required subject to SCO endorsement and RMS approval.

2.4 Other OSD Construction Considerations

2.4.1 Approvals

Sydney Metro contractors would be required to secure all required statutory approvals prior to the commencement of works. Refer to Section 6 of the CTMF (prepared by Sydney Metro) for traffic management related approvals.

2.4.2 Hoardings

Hoardings would need to be placed around the perimeter of construction site areas to protect the site and any passing pedestrians and vehicles in accordance with relevant standards and having regard to Section 9.2 of the CTMF.

2.4.3 Vulnerable Road Users

The OSD Contractor would be required to adopt applicable vulnerable road user safety measures, as outlined in the CTMF and in accordance with the Sydney Metro Principal Contractor Health and Safety Standard.

3.0 OSD Construction Methodologies

3.1 Construction Staging Scenarios

The buildings that comprise the Crows Nest OSD are on different sites and could potentially be developed at different times. Construction management planning is therefore proceeding on the basis of three possible staging scenarios:

- Scenario 1: all OSD is constructed while Metro station construction is underway and all buildings are effectively complete when the station is opened.
- Scenario 2: OSD construction has commenced for all buildings and may still be occurring after commencement of Metro station operation.
- Scenario 3: OSD construction starts after the Metro station is operational.

Staging scenarios 1-3 are illustrated in **Figure 7** below.

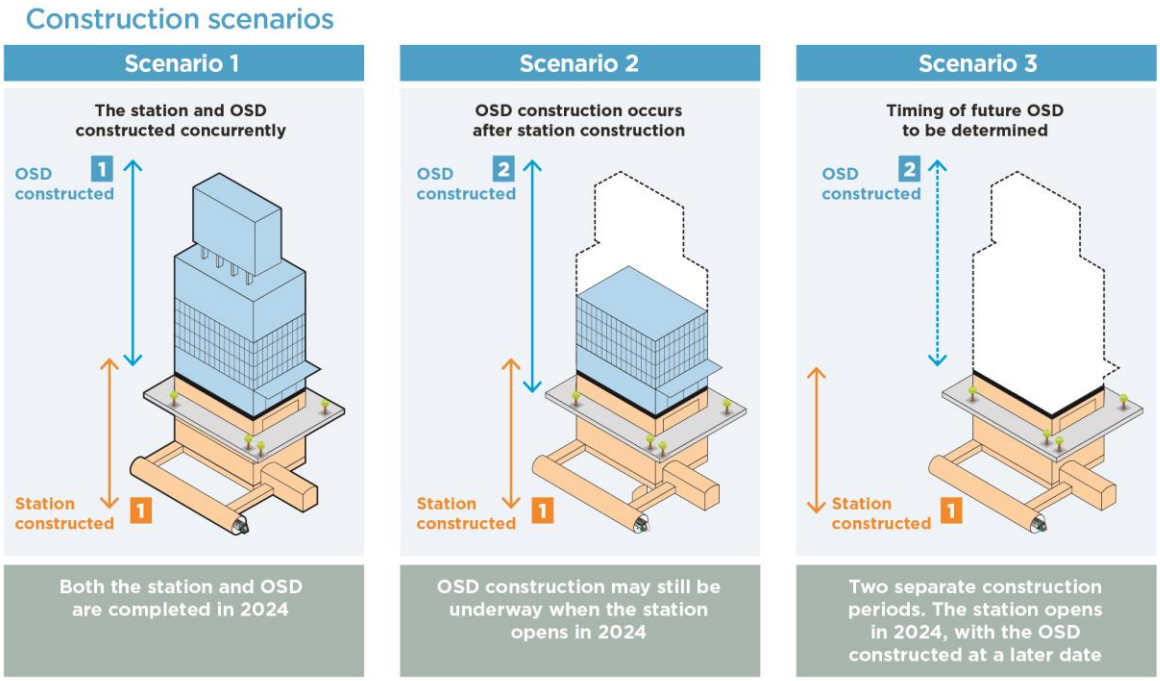

Figure 7: Crows Nest OSD construction staging scenarios

Anticipated construction timelines for each staging scenario are as follows:

- Scenario 1: Station work complete and station operational in 2024. OSD start: 2022. OSD completed by 2024.
- Scenario 2: Station work complete and station operational in 2024. OSD start: after 2023 with completion post 2024
- Scenario 3: Station work complete and station operational in 2024. OSD start: after 2024.

Scenario 1 – Concurrent Metro & OSD Construction

In this scenario Metro station construction and OSD construction coincide. Vehicular access via Oxley Street, Hume Street, Clarke Street and Clarke Lane will be required for OSD construction. Shared use of construction site accesses is unlikely to be required as the works are anticipated to be delivered as a single package by a single contractor.

Kerbside loading or works zones are likely to be required along the Clarke Street, Clarke Lane and Hume Street frontages at some points during construction. At least one tower crane will be operational at the site during Metro and OSD construction. There is no basement car parking to be provided as part of the Crows Nest OSD, and the OSD construction methodology assumes that construction activity will need to occur via Clarke Lane and will be required to be managed through the loading docks on Sites A and B.

3.2 Scenario 2 – OSD Construction continues after Metro Opening

The scenario assumes OSD construction continues after the Metro station commences operations. Metro construction activities partially coincide with OSD construction but the OSD works continue. While shared construction accesses is unlikely to be an issue, the operational Metro station will result in some restriction of construction vehicle access to the loading docks which may require the OSD contractor to seek approval for loading or works zones on the street frontages. At least one OSD tower crane will be required. As before, the construction methodology assumes that activity will need to occur via Clarke Lane and will be required to be managed through the loading docks on Sites A and B. The operating Metro station and other tenants will also require access to these dock facilities.

3.3 Scenario 3 – OSD Construction starts after Metro Opening

Under this scenario Metro construction works have completed, the Metro station is operational and OSD construction begins after the Metro station has commenced operations. Metro construction activities are not assumed to coincide with OSD construction. The impacts and risks associated with two separate Metro station and OSD construction periods are similar to Scenario 2. That is, OSD construction activities occurring above and around an operating Metro station.

The Metro station access points are at Pacific Highway at Site A and at Clarke Street at Site C. A bicycle route will be provided along Hume Street to access the bicycle parking near the Clarke Street entrance as part of the station development. Construction vehicles will need to access the Crows Nest sites from Pacific Highway via Hume Street and Oxley Street/Clarke Street/Hume Street, which are within the pedestrian and cycling environments used for station access.

4.0 Indicative Construction Traffic Generation

The highest construction traffic generation scenario is for OSD staging Scenario 1, where the full OSD and metro station are being constructed together. Indicative estimates of traffic generation associated with the Metro station fitout and the OSD works are provided below in **Table 1**.

Table 1. Indicative Traffic Generation Estimates

Use	Peak Hour[1]			Non Peak Hour[2]			Evening[3]			Night[4]		
	Light	HV	Total	Light	HV	Total	Light	HV	Total	Light	HV	Total
Metro Station[5]	2	6	8	10	22	32	2	6	8	2	6	8
OSD[6]	2	3	5	8	10	18	2	5	7	2	5	7
Total	**4**	**9**	**13**	**18**	**32**	**50**	**4**	**11**	**15**	**4**	**16**	**20**

Notes:
1. AM peak hour x 1 and PM peak hour x 1 (7-8am / 5-6pm)
2. 9 hours (8-5pm)
3. 4 hours (6-10pm)
4. 9 hours (10pm-7am)
5. Sourced from Sydney Metro Chatswood to Sydenham EIS, May 2016
6. SMDO Estimates (assumes 23 HV arrivals per day on average)

The Metro City and Southwest Chatswood to Sydenham EIS assessment did not include an assessment of concurrent Metro Station fitout and OSD traffic (Scenario 1). The EIS analysis demonstrates that the operational performance of the road network does not deteriorate as a result of the Metro station construction works. SCO and RMS, however, may still require that restrictions be placed on peak hour OSD heavy vehicle traffic generation in order to maintain road network efficiency.

5.0 Impacts and Preliminary Mitigation Proposals

The key impacts and possible mitigations for each staging scenario are considered separately below.

5.1 Scenario 1 - Concurrent Metro & OSD Construction

Pedestrians – each of the three works sites will have at least one point of vehicular access. Access driveways will be required via Clarke Lane and/or Hume Street (to/from Site A), via Clarke Lane (to/from Site B) and via Clarke Lane and/or Hume Street (to/from Site C). Measures will be required to minimise pedestrian/vehicular conflict. The risk to pedestrians in Scenario 1 is relatively lower than other scenarios because OSD construction would be occurring while the Metro is not carrying passengers. Specific pedestrian management measures would need to be put in place to manage pedestrians on all frontages to the sites. This may include a restriction on heavy vehicle access into and out of the sites during the AM and PM peak periods.

Metro customers – The Metro station has yet to open and therefore Metro customers would not be moving into and out of the station. This mitigates risk compared to Scenario 2.

Buses and bus customers – OSD and Metro works are ongoing which means that there is a low to moderate risk that construction vehicle activity may adversely impact bus operations along the Pacific Highway and other streets. Currently, buses operate along the Pacific Highway and via Hume Street. The addition of construction vehicle routes on these streets may result in impacts to these bus services such as minor delays to travel times. There are bus stops in the Pacific Highway and the Hume Street bus stop was recently removed to accommodate the Metro TSE contract works.

Taxis – there are currently no dedicated taxi parking spaces on Pacific Highway, Hume Street, Clarke Street or Oxley Street outside the OSD sites, and thus no impacts to taxi operations outside of general construction traffic management applying to all vehicles. The Integrated Access Plan for Crows Nest station proposes to deliver taxi and kiss and ride spaces on the southern side of Clarke Street northwest of OSD site C as part of the station development. These spaces will be available for use from commencement of station operations.

5.2 Scenario 2 - OSD Construction continues after Metro Opening

Pedestrians – pedestrian exposure is higher than for Scenario 1 because OSD construction is occurring after the Metro station has opened and pedestrians and passengers are accessing the station. Specific pedestrian management measures would need to be put in place to manage pedestrians on all frontages to construction sites. This may include a restriction on heavy vehicle access into and out of sites during the AM and PM peak periods. A Pedestrian Management Plan would be prepared with the Construction Environmental Management Plan for the OSD.

Metro customers – the Crows Nest Metro station contractor works have been completed, the Metro station is open and OSD contractor works are ongoing. This increases risks for Metro customers and pedestrians generally, if construction activities are not clearly

segregated.

Buses and bus customers – OSD construction vehicle activity and higher Metro generated bus activity will coincide as there are planned bus stops near the southern Metro entry.

Taxis – OSD construction vehicles may travel northwest along Clarke Street as a secondary egress route towards Oxley Street and Pacific Highway. These will coincide with station-related taxi and kiss and ride vehicles using the dedicated spaces on Clarke Street. Depending on the timing of the start of OSD construction and on the kerbside taxi arrangements in place on or around 2024, replacement taxi space(s) may need to be provided in the immediate vicinity of the sites to mitigate any OSD related displacement.

Traffic and access - The OSD contractor may require vehicular access to the shared loading dock facilities during construction. The operating Metro station will also require some access to these dock facilities, however these will not be highly utilised by station operations and the station also has a separate services bay. This would require careful management of pedestrian and vehicular conflicts along Clarke Lane where the loading dock facilities are proposed to be located and accessed. The CTMF (Appendix C) states that the SCO does not support the use of on-street parking zones by trucks without prior approval. Any proposal to lift material to and from heavy vehicles located in the kerbside lanes to the sites would need to be done in accordance with relevant standards and only after SCO endorsement and RMS approval of the CTMP.

The Interchange Access Plan for Crows Nest station proposes to implement a shared vehicle/pedestrian zone on Clarke Lane, with threshold treatments and reduced speed limits, and a bicycle path along the length of Hume Street with connections to the Metro bicycle parking facilities on Site A and also the bicycle path on the northern side of Clarke Street. Construction activities will need to be carefully managed with pedestrian and cyclist protection for:

- vehicles crossing the bicycle lane when turning from Pacific Highway to Hume Street
- vehicles crossing the bicycle lane from Hume Street (northbound or southbound) to Clarke Lane and Clarke Street
- vehicles accessing loading docks via the shared zone area of Clarke Lane.

This could be through marshalling and traffic control at Hume Street and Clarke Lane.

During construction, contractors will also need to accommodate regular deliveries to adjacent land uses. Some of these uses receive heavy vehicle deliveries via Clarke Lane.

5.3 Scenario 3 - OSD Construction starts after Metro Opening

Pedestrians – the risk to pedestrians is similar to Scenario 2 because OSD construction is occurring after the Metro station has opened. As would be the case for Scenario 2, specific pedestrian management measures would need to be put in place to manage pedestrians on all frontages to the sites. A Pedestrian Management Plan would be prepared with the Construction Environmental Management Plan for the OSD.

Metro customers – As would be the case for Scenario 2, OSD contractor works occur after

the Metro station is operational. Construction management procedures and risk mitigations would be similar to those adopted for Scenario 2.

Buses and bus customers – As with Scenario 2, OSD construction vehicle activity and higher Metro generated bus activity will coincide and will need to be managed.

Taxis – Depending on the timing of the start of OSD construction and on the kerbside taxi arrangements in place on or around 2024, replacement taxi and kiss and ride spaces may need to be provided in the immediate vicinity of the sites to mitigate any OSD related displacement.

Traffic and Access – as for Scenario 2, access to loading docks, and for construction vehicles travelling on Hume Street, Clarke Street and in the Clarke Lane shared zone area would need to be carefully managed, potentially with marshalling and traffic control.

6.0 Conclusion

The buildings that comprise the Crows Nest OSD are on different sites and could potentially be developed at different times before or after commencement of Metro station operations. Construction management planning is therefore proceeding on the basis of three possible staging scenarios:

- Scenario 1: OSD constructed while Metro construction is underway
- Scenario 2: OSD construction may still be occurring after commencement of Metro station operation
- Scenario 3: OSD construction starts after the Metro station is operational.

The preferred approach is for the Metro station, OSD and public domain works to be constructed via a single ISD package. This would mitigate many of the identified impacts associated with delivery of the works.

Whilst not yet approved, and irrespective of the staging scenario adopted, the construction traffic management principles outlined in the City and Southwest Metro CTMF are those that will apply to Crows Nest ISD construction. A Construction Management Plan will be submitted with the detailed SSD Application by the contractor when the construction staging is determined and mitigation measures can be defined in detail.

The principles and mitigation strategies outlined in the CTMF and in this Statement will ensure that impacts on pedestrians, rail users, bus services and taxis are manageable for all the staging scenarios.